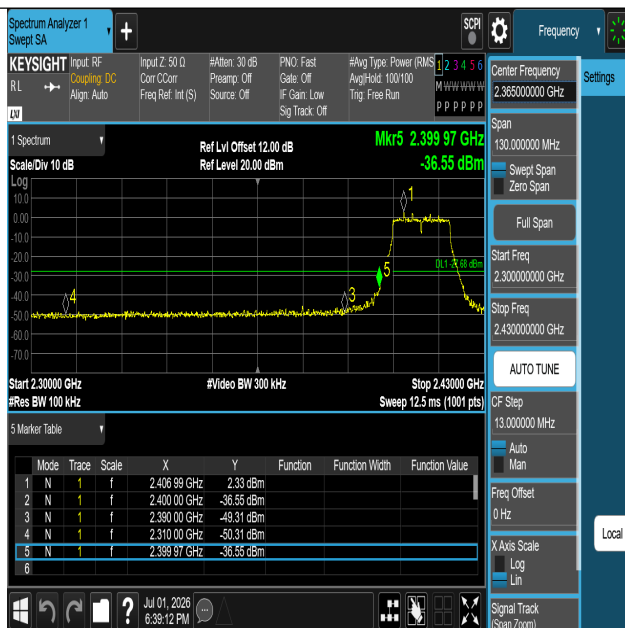
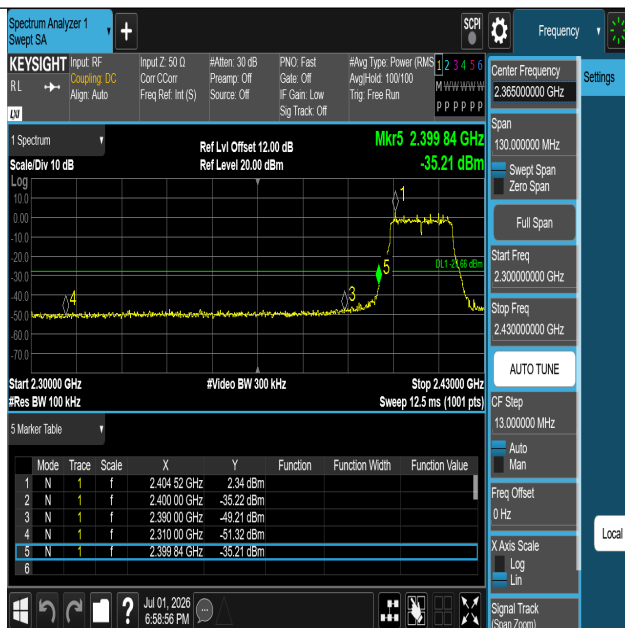




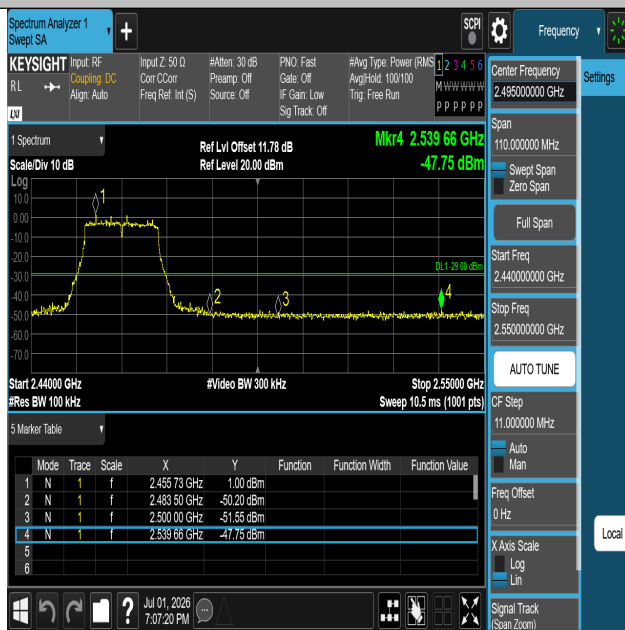
11G-Ant1-2412-PASS



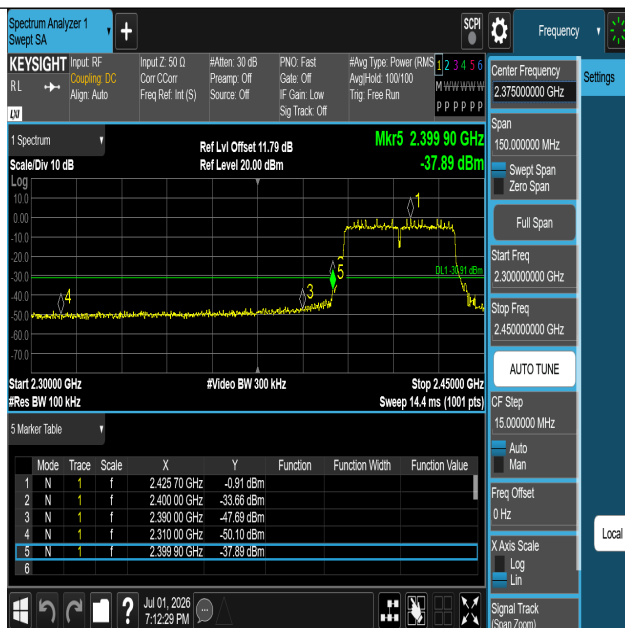
11G-Ant1-2462-PASS



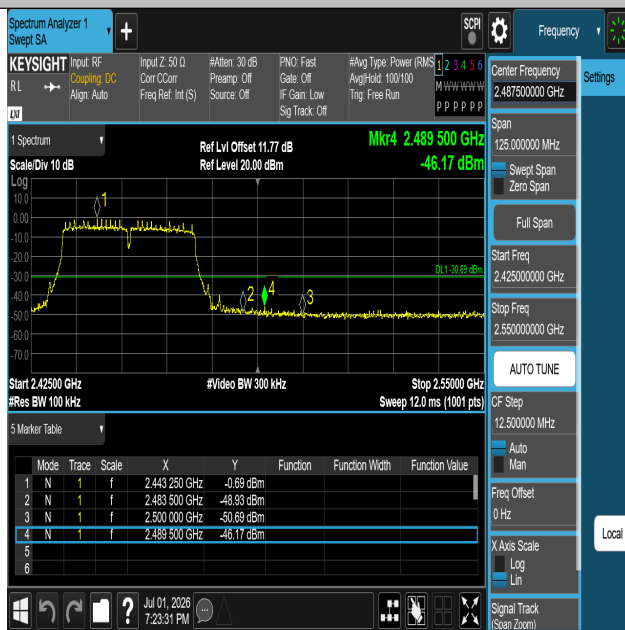
11N20SISO-Ant1-2412-PASS



11N20SISO-Ant1-2462-PASS



11N40SISO-Ant1-2422-PASS



11N40SISO-Ant1-2452-PASS



9 6dB Bandwidth Measurement

Test Requirement : FCC CFR47 Part 15 Section 15.247

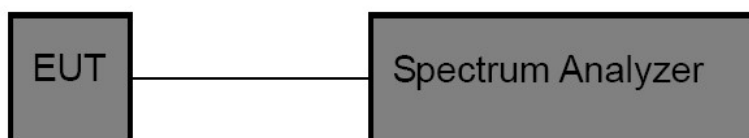
Test Method : ANSI C63.10:2020

Test Limit : Systems using digital modulation techniques may operate in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

9.1 Test Procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;
2. Set the spectrum analyzer: RBW = shall be in the range of 1% to 5% of the OBW but not less than 100kHz, VBW $\geq$ [3 $\times$ RBW].

9.2 Test Setup



9.3 Test Result

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.080	2407.480	2416.560	0.5	PASS
11B	Ant1	2437	9.040	2432.520	2441.560	0.5	PASS
11B	Ant1	2462	9.080	2457.480	2466.560	0.5	PASS
11G	Ant1	2412	16.400	2403.840	2420.240	0.5	PASS
11G	Ant1	2437	16.440	2428.840	2445.280	0.5	PASS
11G	Ant1	2462	16.440	2453.800	2470.240	0.5	PASS
11N20SISO	Ant1	2412	17.600	2403.240	2420.840	0.5	PASS
11N20SISO	Ant1	2437	17.600	2428.240	2445.840	0.5	PASS
11N20SISO	Ant1	2462	17.600	2453.240	2470.840	0.5	PASS
11N40SISO	Ant1	2422	36.240	2403.920	2440.160	0.5	PASS
11N40SISO	Ant1	2437	36.160	2419.000	2455.160	0.5	PASS
11N40SISO	Ant1	2452	36.160	2434.000	2470.160	0.5	PASS



Test Graphs:



11B-Ant1-2412-PASS



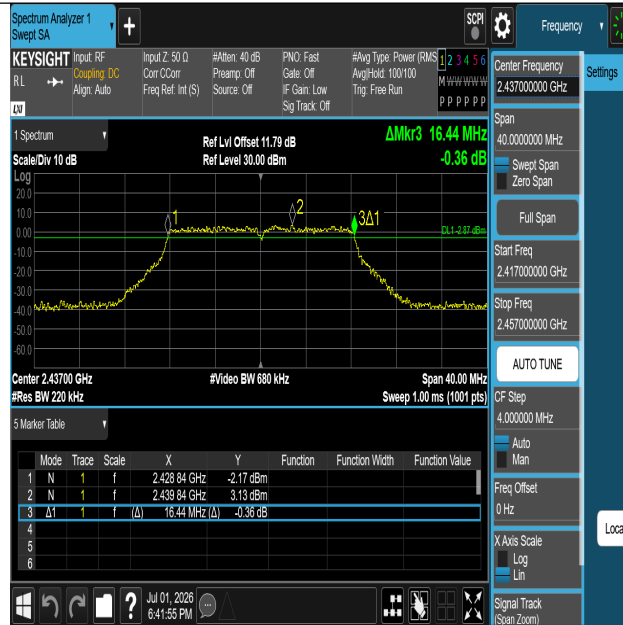
11B-Ant1-2437-PASS



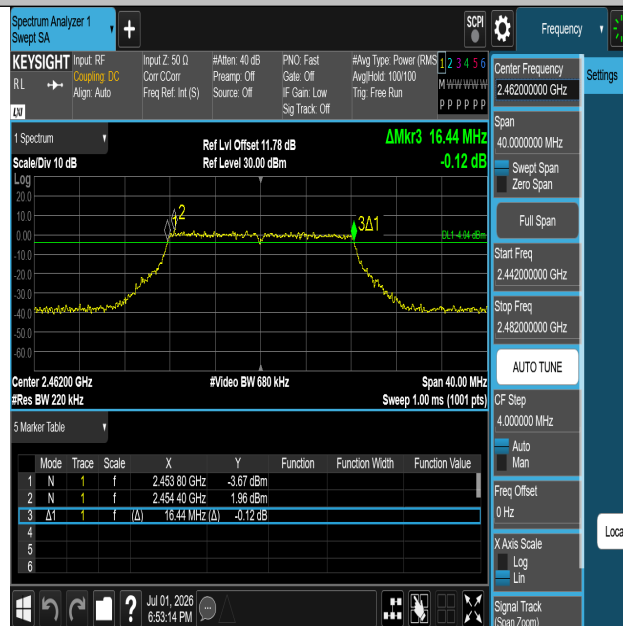
11B-Ant1-2462-PASS



11G-Ant1-2412-PASS



11G-Ant1-2437-PASS



11G-Ant1-2462-PASS



11N20SISO-Ant1-2412-PASS



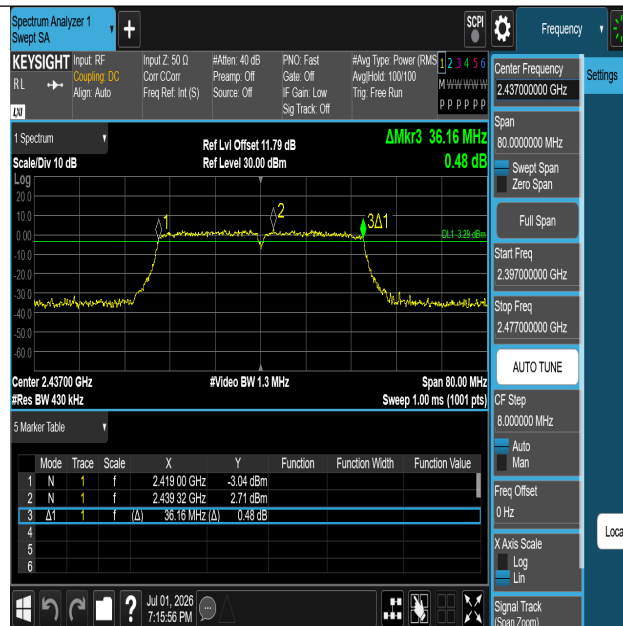
11N20SISO-Ant1-2437-PASS



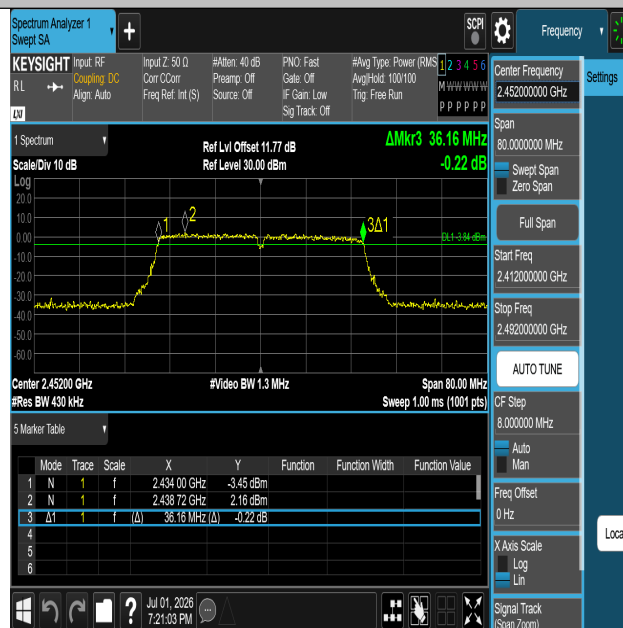
11N20SISO-Ant1-2462-PASS



11N40SISO-Ant1-2422-PASS



11N40SISO-Ant1-2437-PASS



11N40SISO-Ant1-2452-PASS



10 Maximum Conducted Output Power

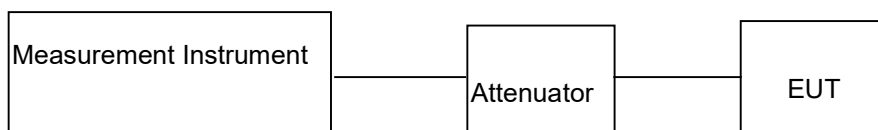
Test Requirement	: FCC CFR47 Part 15 Section 15.247
Test Method	: ANSI C63.10:2020
Test Limit	: Regulation 15.247 (b)(3), For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power.

10.1 Test Procedure

According to ANSI C63.10-2020 clause 11.9.2.2.4 Method AVGSA-2
Method AVGSA-2 uses trace averaging across ON and OFF times of the EUT transmissions, followed by duty cycle correction. The procedure for this method is as follows:

- Measure the duty cycle D of the transmitter output signal as described in 11.6.
- Set span to >1.5 times the OBW.
- Set RBW = 1% to 5% of the OBW, but do not exceed 1 MHz.
- Set VBW $\geq [3 \times \text{RBW}]$.
- Number of points in sweep $\geq [2 \times \text{span} / \text{RBW}]$. (This gives bin-to-bin spacing $\leq \text{RBW} / 2$, so that narrowband signals are not lost between frequency bins.)
- Sweep time = auto.
- Detector = Power averaging (rms), if available. Otherwise, use the sample detector mode.
- Do not use sweep triggering. Allow the sweep to “free run.”
- Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 until trace is stabilized so that the average accurately represents the true average over the ON and OFF periods of the transmitter.
- Compute power by integrating the spectrum across the OBW of the signal using the instrument's band-power measurement function with band limits set equal to the OBW band-edges. If the instrument does not have a band-power function, then sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.
- Add $[10 \log (1 / D)]$, where D is the duty cycle, to the measured power to compute the average power during the actual transmission times (because the measurement represents an average over both the ON and OFF times of the transmission). For example, add $[10 \log (1/0.25)] = 6 \text{ dB}$ if the duty cycle is 25%.

10.2 Test Setup





10.3 Test Result

Test Mode	Antenna	Frequency[M Hz]	Set Power	Average power [dBm]	Duty Cycle [%]	DC Factor [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	NA	8.81	99.52	0.02	8.83	≤30.00	PASS
11B	Ant1	2437	NA	8.01	99.52	0.02	8.03	≤30.00	PASS
11B	Ant1	2462	NA	7.71	99.04	0.04	7.75	≤30.00	PASS
11G	Ant1	2412	NA	7.33	95.81	0.19	7.52	≤30.00	PASS
11G	Ant1	2437	NA	7.01	94.93	0.23	7.24	≤30.00	PASS
11G	Ant1	2462	NA	5.81	95.37	0.21	6.02	≤30.00	PASS
11N20SISO	Ant1	2412	NA	7.23	94.12	0.26	7.49	≤30.00	PASS
11N20SISO	Ant1	2437	NA	6.8	92.31	0.35	7.15	≤30.00	PASS
11N20SISO	Ant1	2462	NA	5.64	94.12	0.26	5.9	≤30.00	PASS
11N40SISO	Ant1	2422	NA	6.81	87.16	0.6	7.41	≤30.00	PASS
11N40SISO	Ant1	2437	NA	6.59	86.24	0.64	7.23	≤30.00	PASS
11N40SISO	Ant1	2452	NA	6.04	87.04	0.6	6.64	≤30.00	PASS

Duty Cycle:

TestMode	Antenna	Frequency[MHz]	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	Factor
11B	Ant1	2412	11.43	11.48	99.56	0.02
11B	Ant2	2412	11.43	11.48	99.56	0.02
11B	Ant1	2437	11.43	11.47	99.65	0.02
11B	Ant2	2437	11.43	11.48	99.56	0.02
11B	Ant1	2462	11.41	11.47	99.48	0.02
11B	Ant2	2462	11.43	11.47	99.65	0.02
11G	Ant1	2412	1.90	1.93	98.45	0.07
11G	Ant2	2412	1.89	1.94	97.42	0.11
11G	Ant1	2437	1.90	1.93	98.45	0.07
11G	Ant2	2437	1.90	1.96	96.94	0.13
11G	Ant1	2462	1.90	1.94	97.94	0.09
11G	Ant2	2462	1.90	1.94	97.94	0.09
11N20MIMO	Ant1	2412	1.77	1.83	96.72	0.14
11N20MIMO	Ant2	2412	1.77	1.83	96.72	0.14
11N20MIMO	Ant1	2437	1.77	1.82	97.25	0.12



11N20MIMO	Ant2	2437	1.77	1.81	97.79	0.10
11N20MIMO	Ant1	2462	1.77	1.83	96.72	0.14
11N20MIMO	Ant2	2462	1.77	1.80	98.33	0.07
11N40MIMO	Ant1	2422	0.87	0.90	96.67	0.15
11N40MIMO	Ant2	2422	0.88	0.93	94.62	0.24
11N40MIMO	Ant1	2437	0.87	0.90	96.67	0.15
11N40MIMO	Ant2	2437	0.87	0.93	93.55	0.29
11N40MIMO	Ant1	2452	0.87	0.93	93.55	0.29
11N40MIMO	Ant2	2452	0.87	0.94	92.55	0.34
11AX20MIMO	Ant1	2412	1.37	1.42	96.48	0.16
11AX20MIMO	Ant2	2412	1.37	1.40	97.86	0.09
11AX20MIMO	Ant1	2437	1.36	1.40	97.14	0.13
11AX20MIMO	Ant2	2437	1.37	1.41	97.16	0.13
11AX20MIMO	Ant1	2462	1.37	1.41	97.16	0.13
11AX20MIMO	Ant2	2462	1.37	1.43	95.80	0.19
11AX40MIMO	Ant1	2422	0.71	0.77	92.21	0.35
11AX40MIMO	Ant2	2422	0.71	0.77	92.21	0.35
11AX40MIMO	Ant1	2437	0.71	0.77	92.21	0.35
11AX40MIMO	Ant2	2437	0.71	0.75	94.67	0.24
11AX40MIMO	Ant1	2452	0.71	0.76	93.42	0.30
11AX40MIMO	Ant2	2452	0.71	0.77	92.21	0.35



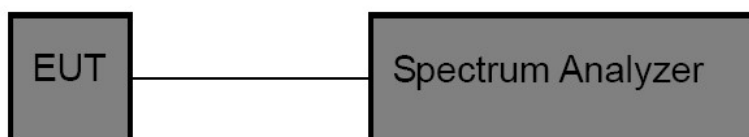
11 Power Spectral density

Test Requirement	: FCC CFR47 Part 15 Section 15.247
Test Method	: ANSI C63.10:2020
Test Limit	: Regulation 15.247(e) The power spectral density conducted from the intentional radiator to the antenna due to the digital modulation operation of the hybrid system, with the frequency hopping operation turned off, shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

11.1 Test Procedure

1. Connect the antenna port(s) to the spectrum analyzer input.
2. Configure the spectrum analyzer as shown below:
Center frequency=DTS channel center frequency
Span = 1.5 times the DTS bandwidth
RBW = 3KHz, VBW = 10KHz
Sweep time = auto couple
Detector = peak
Trace mode =max hold
3. Place the radio in continuous transmit mode, allow the trace to stabilize, view the transmitter wave form on the spectrum analyzer.
4. Use the peak marker function to determine the maximum amplitude level within the RBW.
5. If measured value exceeds limit, reduce RBW(no less than 3KHz) and repeat.

11.2 Test Setup

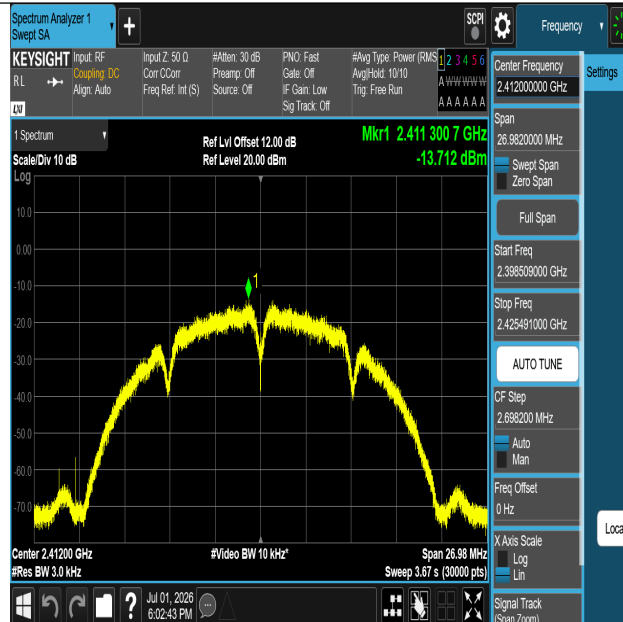


11.3 Test Result

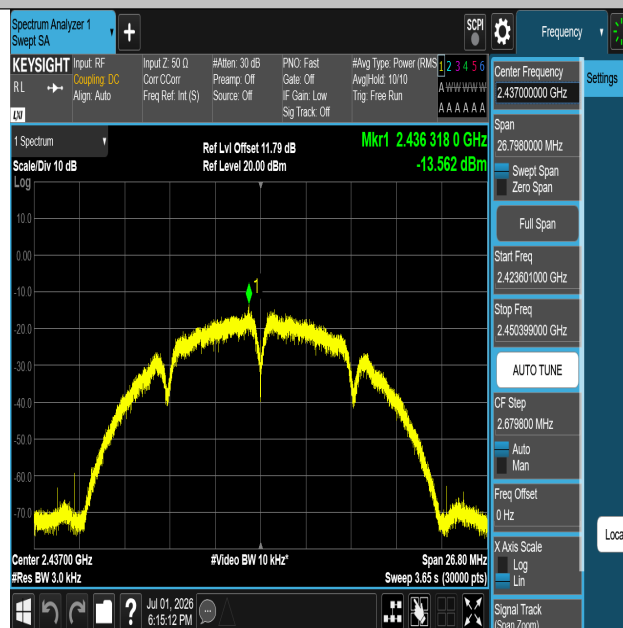
TestMode	Antenna	Frequency[MHz]	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-13.69	≤8.00	PASS
11B	Ant1	2437	-13.54	≤8.00	PASS
11B	Ant1	2462	-14.85	≤8.00	PASS
11G	Ant1	2412	-16.30	≤8.00	PASS
11G	Ant1	2437	-17.01	≤8.00	PASS
11G	Ant1	2462	-16.04	≤8.00	PASS
11N20SISO	Ant1	2412	-16.81	≤8.00	PASS
11N20SISO	Ant1	2437	-16.44	≤8.00	PASS
11N20SISO	Ant1	2462	-18.39	≤8.00	PASS
11N40SISO	Ant1	2422	-17.98	≤8.00	PASS
11N40SISO	Ant1	2437	-17.58	≤8.00	PASS
11N40SISO	Ant1	2452	-18.57	≤8.00	PASS



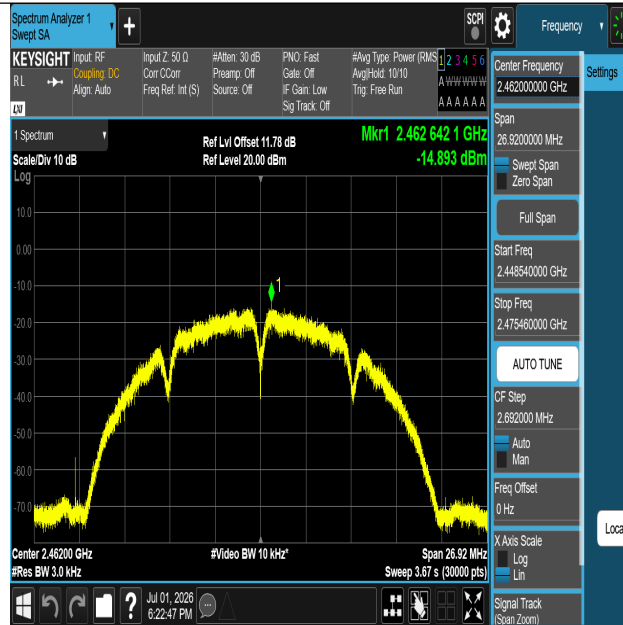
Test Graphs:



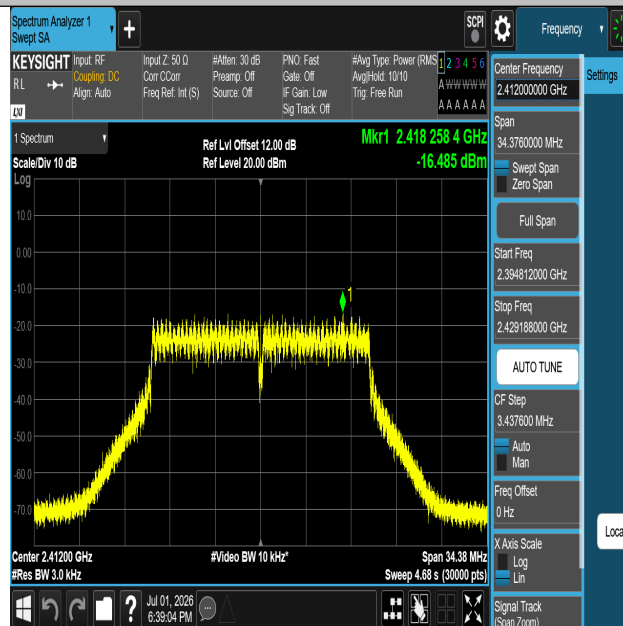
11B-Ant1-2412-PASS



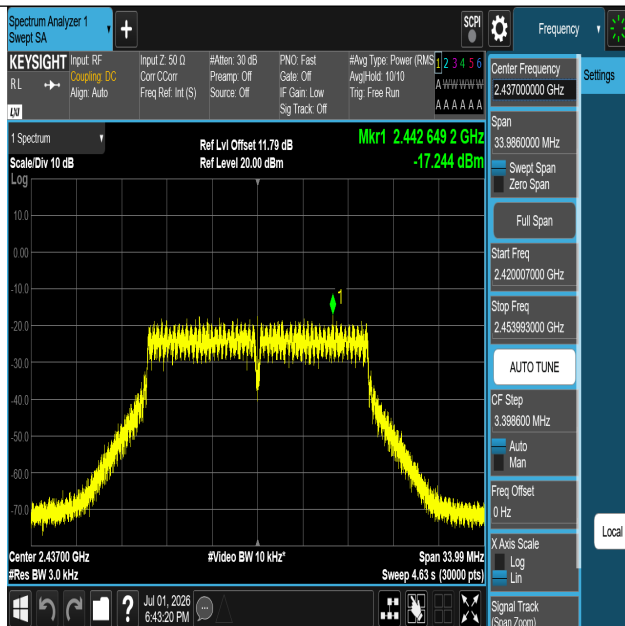
11B-Ant1-2437-PASS



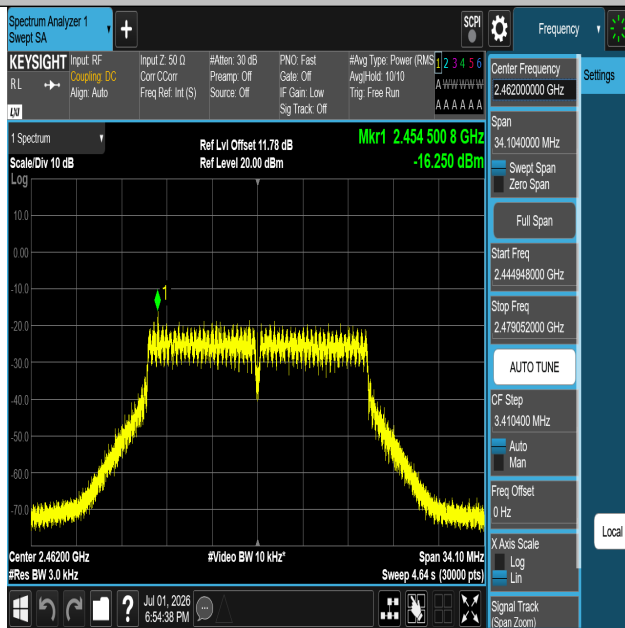
11B-Ant1-2462-PASS



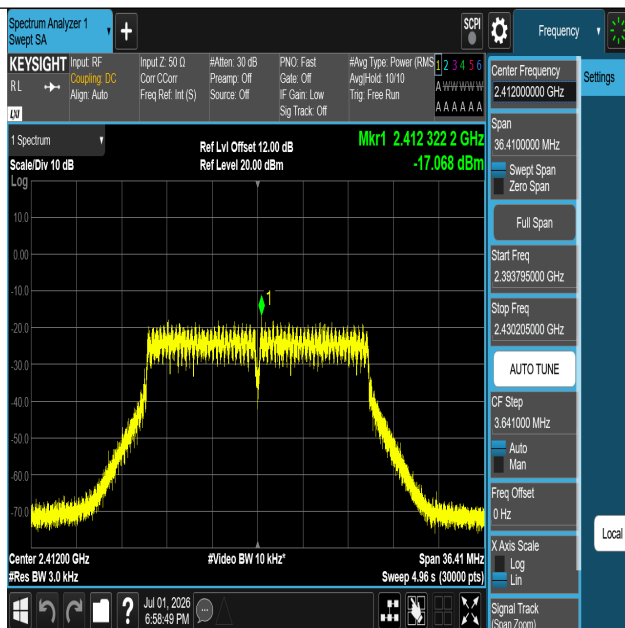
11G-Ant1-2412-PASS



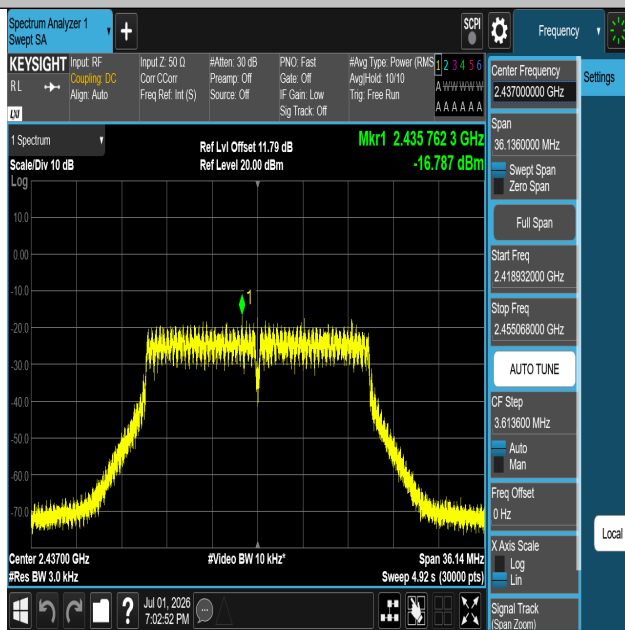
11G-Ant1-2437-PASS



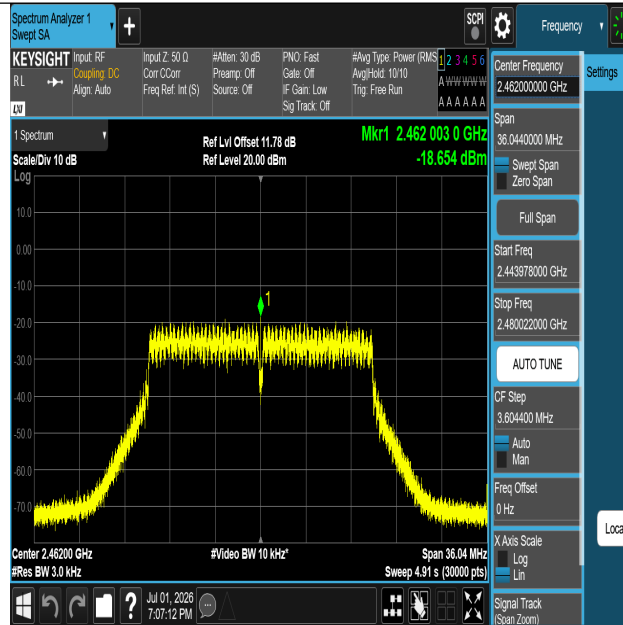
11G-Ant1-2462-PASS



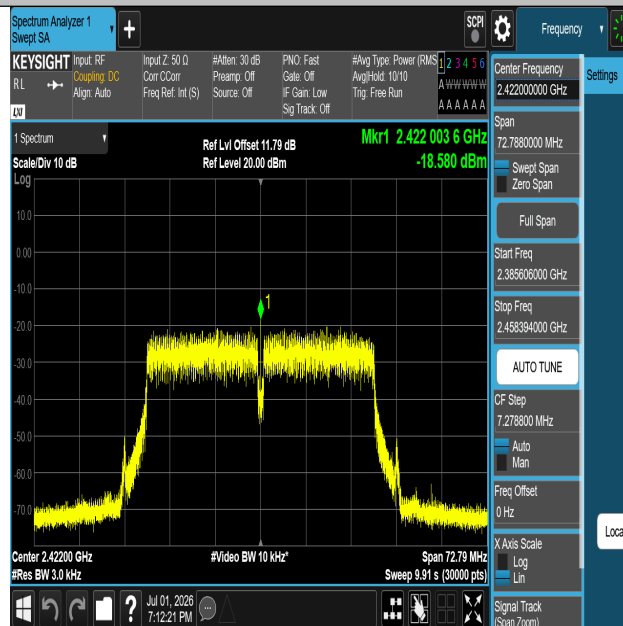
11N20SISO-Ant1-2412-PASS



11N20SISO-Ant1-2437-PASS



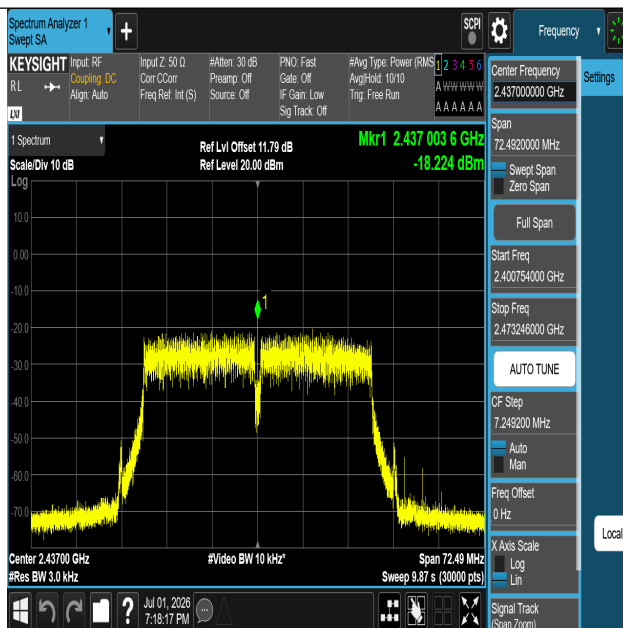
11N20SISO-Ant1-2462-PASS



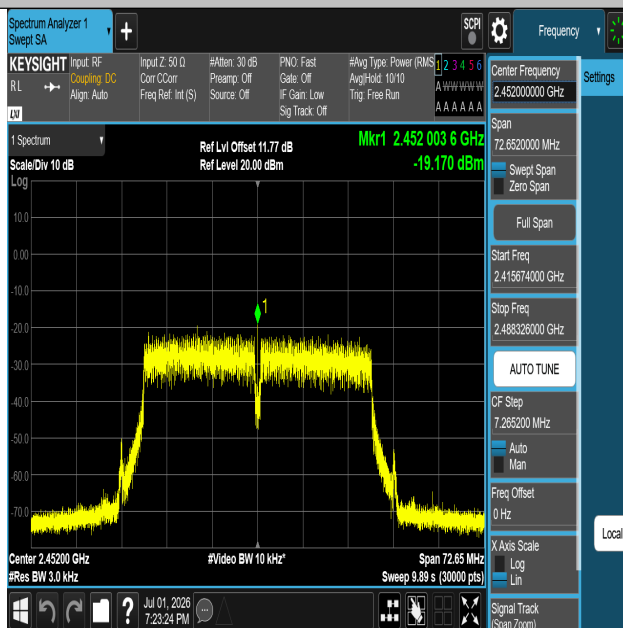
11N40SISO-Ant1-2422-PASS



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11N40ISO-Ant1-2437-PASS



11N40ISO-Ant1-2452-PASS



12 Antenna Application

12.1 Antenna Requirement

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

12.2 Result

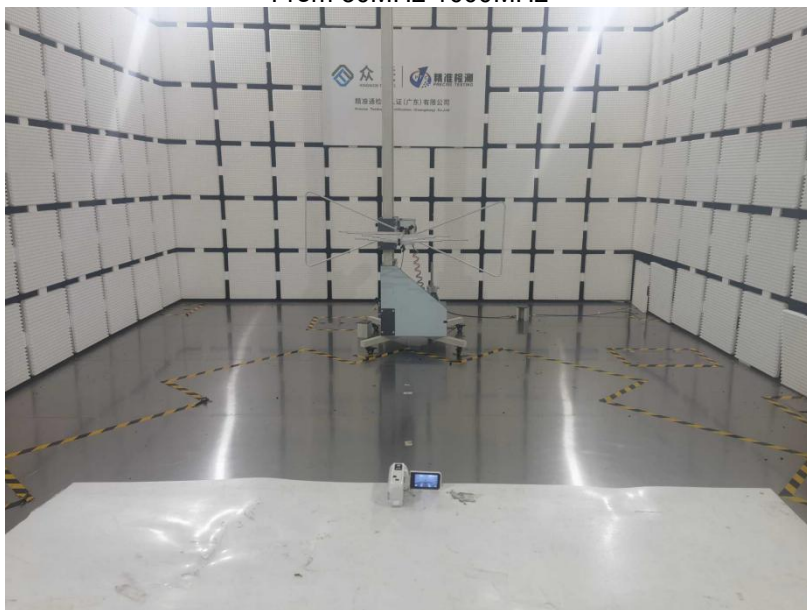
The EUT'S antenna, permanent attached antenna, is PCB Antenna. The antenna's gain is 1.45 dBi and meets the requirement.

13 Test Setup

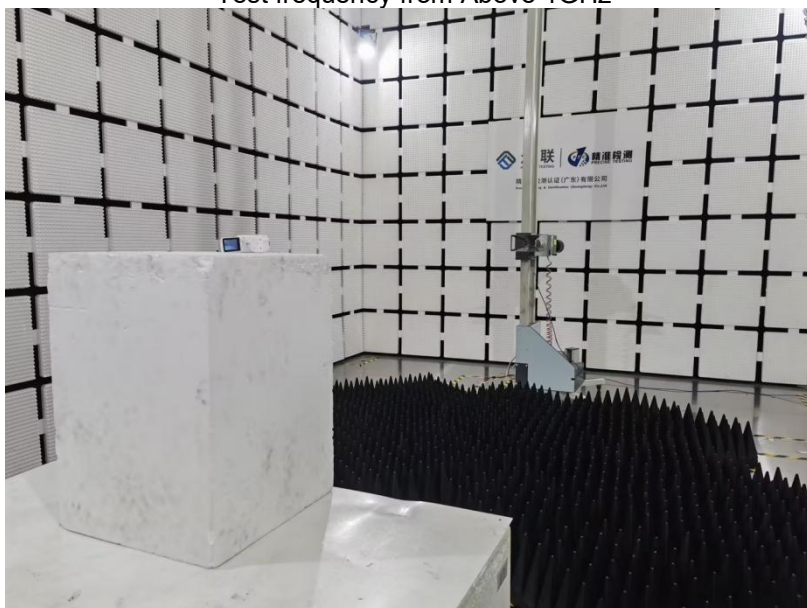
Conducted Emissions



Radiated Spurious Emissions
From 30MHz-1000MHz



Test frequency from Above 1GHz





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14 EUT PHOTOS

please reference file "EUT photos"

*******THE END REPORT*******